

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WAYNE I. KNIGGE, KAREN E. MCCLURE,
PATRICK J. SUMPMANN and WILLIAM E. ARCHIBALD

Appeal 2007-2060
Application 09/945,318
Technology Center 1700

Decided: September 25, 2007

Before EDWARD C. KIMLIN, CHUNG K. PAK, and PETER F. KRATZ,
Administrative Patent Judges.

PAK, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Examiner's refusal to allow claims 1, 4 through 17, 21, 22, 24, 27 through 29, 32 through 35, 37 through 39, 41 through 43, 45 through 57, 59 through 65, and 77 through 79, all of the claims pending in the above-identified application. We have jurisdiction pursuant to 35 U.S.C. § 6.

STATEMENT OF THE CASE

The subject matter on appeal is directed to a package including frangible “food products in a vacuum or an environment having less than about 1 ppm hexanal therein” (Specification 1, ll. 6-10). Further details of the appealed subject matter are recited in representative claims 1¹ reproduced below:

1. A package comprising:

a bag formed of a material comprising a laminate, a co-extrusion of at least two materials or a combination thereof, the bag having an exterior portion, an interior portion, an oxygen barrier and a moisture barrier, wherein the bag becomes sufficiently rigid when vacuum-sealed to reduce breakage of an item contained therein, the item comprising a frangible puffed cereal-based material having a crush resistance or resistance to compression no less than about 7.0 PSIA, wherein the item is held in the interior portion of the bag, the interior portion of the bag having less than about 1 ppm hexanal therein, wherein vacuum-sealing allows the package to be filled with approximately 20 to 60% more cereal-based material.

As evidence of unpatentability of the claimed subject matter, the Examiner has relied upon the following references:

McCrosson	US 1,458,585	Jun. 12, 1923
Ray	US 2,370,419	Feb. 27, 1945
Thompson ‘438	US 2,478,438	Aug. 09, 1949
Thompson ‘990	US 3,246,990	Apr. 19, 1966

¹ The Appellants have not supplied any *substantive* arguments for the separate patentability of any specific claims in the context of Rejection (1) discussed below. See the Second Substitute Appeal Brief dated September 6, 2006 (Br.) and the Reply Brief dated January 22, 2007 (Reply Br.) in their entirety. Therefore, for purposes of Rejection (1) *infra*, we focus our discussion on independent claim 1 alone pursuant to 37 C.F.R. § 41.37(c)(1)(vii).

Ylvisaker	US 4,964,259	Oct. 23, 1990
Schwab	US 5,342,635	Aug. 30, 1994
Maglecic	US 5,473,866	Dec. 12, 1995
Hellweg	US 5,523,109	Jun. 04, 1996
Seaward	WO 98/12110	Mar. 26, 1998
Miyake	US 5,942,320	Aug. 24, 1999
Ours	US 6,062,467	May 16, 2000
Beer	US 6,213,645 B1	Apr. 10, 2001
Galomb	US 6,245,367 B1	Jun. 12, 2001
Witkowski	US 6,594,927 B2	Jul. 22, 2003

Francis, *Encyclopedia of Food Science and Technology*, 2nd Ed., Vol. 1, 2622-2625 (2000).

As evidence of nonobviousness of the claimed subject matter, the Appellants have relied upon the following literature:

Stanley Sacharow, *Increasing Food Shelf-Life by Vacuum and Gas Packaging*, *Packaging Technology*, 29-30 and 62 (May 1970) (hereinafter referred to as "Sacharow").

The Examiner has rejected the claims on appeal as follows:

1. Claims 1, 10, 12, 15, 27 through 29, 41, 42, 59 through 61, 65, and 77 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Beer, Thompson '990, Francis, Maglecic, McCrosson, and Ylvisaker;

2. Claims 4 and 48 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Beer, Thompson '990, Francis, Maglecic, McCrosson, Ylvisaker, and Ray;

3. Claims 49 and 50 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Beer, Thompson '990, Francis, Maglecic, McCrosson, Ylvisaker, Ray, and Ours.

4. Claims 5 through 8, 13, and 14 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Beer, Thompson '990, Francis, Maglecic, McCrosson, Ylvisaker, and Witkowski;

5. Claims 9, 11, 33 through 35, 37, 38 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Beer, Thompson '990, Francis, Maglecic, McCrosson, Ylvisaker, and Galomb;

6. Claims 16, 17, 21, 22, 43, 45 through 47, and 51 through 57 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Beer, Thompson '990, Francis, Maglecic, McCrosson, Ylvisaker, and Thompson '438;

7. Claim 24 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Beer, Thompson '990, Francis, Maglecic, McCrosson, Ylvisaker, and Schwab;

8. Claim 32 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Beer, Thompson '990, Francis, Maglecic, McCrosson, Ylvisaker, and Seaward;

9. Claims 39, 78, and 79 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Beer, Thompson '990, Francis, Maglecic, McCrosson, Ylvisaker, and Hellweg; and

10. Claims 62 through 64 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Beer, Thompson '990, Francis, Maglecic, McCrosson, Ylvisaker, and Miyake;

The Appellants appeal from the Examiner's decision rejecting the claims on appeal under 35 U.S.C. § 103(a).

PRINCIPLES OF LAW, FACTS, ISSUES, and ANALYSES

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary consideration (e.g., unexpected results). *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). “[A]nalysis [of whether the subject matter of a claim would be obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740-41, 82 USPQ2d 1385, 1396 (2007) *quoting In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336-37 (Fed. Cir. 2006); *see also DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1361, 80 USPQ2d 1641, 1645 (Fed. Cir. 2006)(“The motivation need not be found in the references sought to be combined, but may be found in any number of sources, including common knowledge, the prior art as a whole, or the nature of the problem itself.”); *In re Bozek*, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969)(“Having established that this knowledge was in the art, the examiner could then properly rely, as put forth by the solicitor, on a conclusion of obviousness ‘from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference.’”).

REJECTION (1): Claims 1, 10, 12, 15, 27 through 29, 41, 42, 59 through 61, 65, and 77.

The Appellants have not disputed the Examiner's finding that Beer teaches a vacuum sealable bag for packaging food products corresponding to that recited in claims 1 and 77. Compare Answer in its entirety with Brief and Reply Brief in their entirety. Nor have the Appellants disputed the Examiner's finding at page 4 of the Answer that a vacuum-sealed opaque oxygen impermeable package, which prevents oxygen and light entry, would necessarily have less than 1 ppm hexanal.² Compare Answer in its entirety with Brief and Reply Brief in their entirety. Rather, the Appellants contend that one of ordinary skill in the art would not have been led to employ Beer's bag to vacuum pack the claimed "frangible" puffed cereal-based material to obtain the increased amount of the cereal filling (20 to 60% more) (Br. 12-17, and 22-29, and Reply Br. 2-5).

The dispositive question is, therefore, whether one of ordinary skill in the art would have been led to employ Beer's oxygen and moisture barrier containing flexible bag to package "a frangible puffed cereal-based material having a crush resistance or resistance to compression no less than about 7.0 PSIA" to increase its amount (20 to 60% more) filled in the bag as recited in claim 1 within the meaning of 35 U.S.C. § 103. On this record, we answer this question in the affirmative.

As indicated at col. 2, ll. 5-62, and col. 3, ll. 25-27, of Beer, its vacuum sealing flexible bag can be advantageously used to package various air-perishable foodstuffs, including, but not limited to, free flowing ready to

² Indeed, we observe that Beer does not mention any hexanal presence.

eat breakfast cereal. Beer clearly teaches that it is desirable to vacuum seal air-perishable foodstuff, including breakfast cereal. Also, the Appellants have not disputed the Examiner's finding at page 5 of the Answer that:

Thompson et al. '990 teach a crisp and friable (i.e. frangible), free-flowing, puffed ready to eat cereal that may be formed into any desired shape, such as a ring, and stays crisp in milk for a prolonged period of time. The product can have anywhere from 5-25% sugar, 1.5-5% fat, 3-5% moisture and can be made from a variety of flours (Column 1, lines 25-42, 60-70; Column 2, lines 35-40, Examples). Francis teaches crush resistance [of cereal-based foods] depends on flour quality (Figure 5), water activity (Figure 13 and Table 11), density (Figure 14) and water content (Figure 14).

....

Maglecic et al. teach settling product in a bag prior to vacuum sealing will provide sufficient rigidity to reduce breakage as compared to conventional sealing and allow, in the case of French fries, 30% more product (i.e. reduce the packaging volume required by 30%). Maglecic et al. teach a vacuum will retain the product in a tight alignment with maximum bulk density (Column 1, lines 10-40; Column 5, lines 20-48; Column 6, lines 52-65). Mc[C]rosson is relied on further evidence that drawing sufficient air from a bag during vacuum sealing so that the bag walls will be drawn in tightly toward the material and conform around the material held within the bag. Mc[C]rosson teaches that even with a bag made of thin material will provide a sufficiently rigid bag structure about a crushable item (e.g. cigar) to reduce breakage during shipping (Page 1, lines 32-51; Page 2, lines 31-65; Figure 1). Ylvisaker et al. teach the degree to which a product settles in bag by conventional filling (or the bulk density) is a function of the geometry of the particular product (Column 1, lines 15-42).

In other words, the Examiner has correctly found that Thompson '990 and Francis not only teach that a frangible puffed cereal-based foodstuff is known, but also teach that such cereal-based foodstuff can be made to have a certain desired crush resistance to avoid or minimize its breakage. The Examiner has also correctly found that Maglecic and McCrosson teach vacuum packaging foodstuff in a flexible bag in such a manner to obtain the kind of advantage (filling a greater amount of food) recited in claim 1 and to minimize the breakage of the soft foodstuff.

Given the desire to vacuum pack the free flowing breakfast cereal of the type discussed in Thompson '990, we determine that one of ordinary skill in the art would have been led to vacuum pack Thompson's cereal having a desired crush resistance, such as that claimed, in Beer's oxygen and moisture barrier containing flexible bag in the manner taught by Maglecic and/or McCrosson, motivated by a reasonable expectation of obtaining the advantages stated above.

The Appellants contend that one of ordinary skill in the art would not have been led to package the frangible puffed cereal-based foodstuff in the flexible bag of the type discussed in Beer (Br. 13-17 and 22-23). In support of this contention, the Appellants refer to the Sacharow literature (Br. 16 and Reply Br. 2-5).

We are not persuaded that the evidence as a whole would have led one of ordinary skill in the art away from the claimed subject matter. We find that Sacharow evidences that one of ordinary skill in the art was aware, at the time of the invention, that such vacuum packaging would have delayed spoilage of the food (due to oxidative rancidity and the inhibition of mold

growth), would have provided a tight package, and would have minimized condensation (form moisture) (p. 29). This evidence is consistent with Beer's desire to vacuum package foodstuffs, including breakfast cereal materials which ingredients are used to make the frangible puffed cereal of the type discussed in Thompson. We find that Sacharow evidences that one of ordinary skill in the art was aware (*id*) that:

....Fragile nut brittle cannot be vacuum packed in a flexible package because its sharp and hard corners may cause package damage.

In addition, vacuum may also cause breakage of the product...

We find that Sacharow evidences that one of ordinary was also aware that the laminated flexible bag of the type discussed in Beer can avoid the package damage mentioned above (*id*). We find that Francis teaches a method by which the cereal of the type discussed in Thomson '990 can be strengthened and Maglecic and/or McCrosson teach a method by which soft products can be packaged in such a manner as to minimize the breakage as indicated in the Answer and *supra*. Thus, given the desire in the art to vacuum package the cereal of the type discussed in Thompson '990 to increase a shelf-life and to prevent breakage of frangible food products such as the cereal of the type discussed in Thompson '990, we determine that one of ordinary skill in the art would have been led to provide a desired crush resistance to the cereal of the type discussed in Thompson '990 in the manner taught by Francis and vacuum pack the same in the manner taught by Maglecic and/or McCrosson to minimize the breakage of the same.

Accordingly, based on the factual findings set forth in the Answer and above, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter claimed within the meaning of 35 U.S.C. § 103

REJECTION (2): Claims 4 and 48.

The Appellants have not disputed the Examiner's determination that:

[T]o place the bag of Beer into an exterior carton would have been obvious, depending on the desired type of exterior packaging appearance since Ray teaches vacuum-sealed cereal containing bags may be stored in cartons if desired and it may be desirable to place the vacuum bag of Beer in a carton so that it would have a better physical fit on a store shelf comprising other cereal cartons. It would have been further obvious to select a paperboard carton, since this is a conventionally well-known carton material for breakfast cereals. (Compare Answer 9, with Br. 17).

Rather, the Appellants rely on the same arguments raised in the REJECTION (1) above. Therefore, based on the factual findings set forth in the Answer and above, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter claimed within the meaning of 35 U.S.C. § 103.

REJECTION (3): Claims 49 and 50.

The Appellants have not disputed the Examiner's determination that:

it would have been obvious to further modify Beer since Ours et al. teach providing a perforated area in the bag near the top when the bag is inside a paperboard carton would

provide a convenient and reclosable way of dispensing the breakfast cereal. (Compare Answer 9-10, with Br. 17-18).

Rather, the Appellants rely on the same arguments raised in the REJECTION (1) above. Therefore, based on the factual findings set forth in the Answer and above, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter claimed within the meaning of 35 U.S.C. § 103.

REJECTION (4): Claims 5-8, 13, and 14.

The Appellants have not disputed the Examiner's determination that:

[I]t would have been obvious to further modify the bags of Beer and include premiums or coupons by affixing pressure sensitive labels, preprinted information, on the inside or outside of the package, or with a separate compartment as recited in claims 5-8, [and] 13-14, since Witkowski teaches it notoriously well known and desirable to provide premiums and/or coupons with cereal based products that are packaged in boxes and teaches how providing such features in a much more efficient way so that products packaged in bags/wrappers may offer the desirable premiums and coupons. (Compare Answer 10-11, with Br. 18).

Rather, the Appellants rely on the same arguments raised in the REJECTION (1) above. Therefore, based on the factual findings set forth in the Answer and above, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter claimed within the meaning of 35 U.S.C. § 103.

REJECTION (5): Claims 9, 11, 33-35, 37, and 38.

The Appellants have not disputed the Examiner's determination that:

[I]t would have been an obvious to modify the walls of Beer to provide a translucent bag or window, depending on if it was desirable for a consumer to view the packaged product since Galomb teaches providing translucent walls or even a transparent window for a cereal bag may be done if desired for viewing the product.

[I]t would have been obvious to modify Beer and include a non-particulate product with a water activity of at least 0.1 and the cereal with a water activity of 0.2-0.4 since it would provide the convenience of having a package holding two items that are stored separately but are eaten together. (Compare Answer 11-12, with Br. 19).

Rather, the Appellants rely on the same arguments raised in the REJECTION (1) above. Therefore, based on the factual findings set forth in the Answer and above, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter claimed within the meaning of 35 U.S.C. § 103.

REJECTION (6): Claims 16, 17, 21, 22, 43, 45-47, and 51-57.

The Appellants have not disputed the Examiner's determination that:

[I]t it would have been obvious to further .modify Beer and include whole grains, such as oat or rice and soy flour, since Thompson et al. '438 teach using the grains and soybeans in combination will provide an improve nutritional formula, and by using whole grains, the cost of ingredients is lower. It would have been further obvious to select an irregular shape, depending on the desired form of puffed cereal, since

Thompson et al. '438 teach puffed, cereals can be made into either a regular shape, such as a ring, or an irregular shape, such as a flake.

Regarding claims 45-47 and 51-57, modified Beer teaches a seal strong enough to maintain vacuum conditions such as a pressure sensitive cold seal and a tin tie, clip or zipper, a brick/rectangular shaped bag with a bottom, opening at the top, and sides ... (Compare Answer 13, with Br. 19-20).

Rather, the Appellants rely on the same arguments raised in the REJECTION (1) above. Therefore, based on the factual findings set forth in the Answer and above, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter claimed within the meaning of 35 U.S.C. § 103.

REJECTIONS (7), (8), and (9): Claims 24, 32, 39, 78, and 79.

The Appellants have not disputed the Examiner's determination that:

[I]t would have been obvious to further include marbits with the cereal of Beer since it was known that this is a pleasing variety of cereal....

[I]t would have been obvious to further modify Beer and flush the bag with Nitrogen, since Beer teaches preventing the degradation effects of air by gas flushing vacuum sealed bags and Kraft Foods Inc. teach[es] a Nitrogen flush will protect cereal products against oxidation when the cereal products held in vacuum sealed bags....

[I]t would have been obvious to modify Beer and select a puffed oat flour-based cereal product, depending on the desired type of flavor or nutrients desired since Beer teaches a free-

flowing breakfast cereal and Thompson et al. teach free-flowing breakfast cereals can be made from a variety of flours, which would vary in flavors and nutrients. It would have been further obvious to treat oat flour to prevent rancidity since Hellweg teaches inactivating enzymes in oat flour to prevent rancidity when oat flour is used for puffed cereal based products....

[I]t would have been obvious to further modify Beer and treat oat flour to prevent rancidity, as recited in claim 78, since Beer's bag will prevent the cereal based material's exposure to oxygen and light during the shelf life, but it does not take into account eliminating the effects of oxygen and light prior to packaging (e.g. during conventional cereal processing steps, such as puffing), and Hellweg teaches inactivating enzymes in oat flour to prevent rancidity when oat flour is used for puffed cereal based products. To obtain nearly double the shelf life would have been obvious, depending on the basis of comparison, since the combination of (1) an oxygen free/light free package and (2) pre-treatment of the flour prior to the puffed cereal production process would increase the shelf life of the puffed cereal most significantly when compared to non-treated flour cereal that is not packed, but less a non-treated flour based cereal stored in a transparent gas flushed bag held in a carton. (Compare Answer 14-16 and 20-21, with Br. 20-21 and 23).

Rather, the Appellants rely on the same arguments raised in the REJECTION (1) above. Therefore, based on the factual findings set forth in the Answer and above, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter claimed within the meaning of 35 U.S.C. § 103.

REJECTION (10): Claims 62-64.

The Appellants have not disputed the Examiner's determination that:

[I]t would have been obvious to include a metallized polymeric layer as the moisture barrier and a substrate of polyethylene, in addition to an oxygen barrier, antioxidants, as recited in claim 63, or even layers of aluminum oxide coated polyethylene, polyester, glass or ceramic, and a polyester seal interior of the aluminum oxide coated polyethylene layer since Miyake et al. teaches these oxygen moisture barriers film-based food packages will have sufficient mechanical strength and provide good preservation for dry foods. (Compare Answer 16-17, with Br. 21-22).

Rather, the Appellants rely on the same arguments raised in the REJECTION (1) above. Therefore, based on the factual findings set forth in the Answer and above, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter claimed within the meaning of 35 U.S.C. § 103.

ORDER

In view of the forgoing, the decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

sld/ljs

JOHN A. O'TOOLE
GENERAL MILLS, INC.
NUMBER ONE GENERAL MILLS BLVD.
P.O. BOX 1113
MINNEAPOLIS, MN 55440